



Use of ion gradients

Taken from Membranes and their Cellular Functions, reviewed on this page

“at equilibrium neutralises the $\Delta\psi$ (membrane potential)”—if it did it could not be used to measure the membrane potential. On p44 the unfortunate Nernst suffers again, $\frac{d\psi}{dx}$ being described as the charge, instead of the electrical potential, gradient. In my own research field, mitochondrial bioenergetics, I would quibble with the authors’ selection and acceptance of some of the very recent data. I am sure others will find the same with their own speciality but this will not seriously affect the student or non-specialist reader: if it stimulates discussion with lecturers so much the better.

A more general criticism is that abbreviations tend to be thrown into the text leaving the reader to search

figures or tables to find their meaning. Also, although the lists of further reading at the end of each chapter are suitably short and carefully chosen, I felt that more help should be given to students in relating articles to particular topics. Further use of the wide margins could be made for both this and explanation of abbreviations.

These are all relatively minor criticisms and do not alter my view that this is now a really excellent book. It is accurately printed in attractive typeface on good paper making it, with the authors’ style and the illustrations, a real pleasure to read. **M. J. Selwyn**

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Biochemistry texts

THREE recent biochemistry texts reflect different approaches to the student market.

The second edition of *An Introduction to Practical Biochemistry* (McGraw-Hill: New York and London, £6) is wide-ranging in its scope, describing in all some 140 simple experiments that can be carried out in any reasonably equipped biochemistry teaching laboratory. It is simply and clearly written. Descriptions of experimental procedures are interspersed with accounts of the appropriate underlying principles. In some cases I feel that this aspect of the book is rather overdone and would best be left to a general textbook. Experiments are adequately described together with lists of quantities of reagents and equipment needed for a given number of students. The book leans heavily to the physical and chemical rather than the physiological side of the subject. There are sections dealing with pH and buffers, separation methods (dialysis, gel filtration, column chromatography, partition chromatography, electrophoresis), colorimetry and spectrophotometry, protein isolation and N-

and C-terminal determination, artificial membranes, nucleic acids (base-composition, isolation and estimation), simple enzyme kinetics and also rather extensive sections dealing with qualitative and quantitative tests for sugars, amino acids and lipids. The final chapter, entitled “Metabolism”, contains experiments of the more physiological type including isolation of mitochondria and chloroplasts, adipocyte isolation and metabolism, intestinal transport of amino acids, glucose fermentation by yeast, bacterial growth and β -galactosidase induction and a few whole-animal experiments. In general, quite a good book that is suitable for use in the first two years of a biochemistry degree course.

Basic Biochemistry: A Visual approach for College and University Students (Heinemann Educational: London, £2.90), by J. Edelman and J. M. Chapman, might appeal to some who like a smattering of biochemistry presented in ‘comic-strip’ form. Personally, I hated it. The book is in three sections. The first deals with the components of the cell, proteins, carbohydrates, lipids and nucleic acids, and in my view is the best part of the book. From this an elementary student should gain some feel for the basic structures in the cell, without gaining

such idea about their chemical properties and reactions or the chemical principles underlying these. The second section deals with enzymes and attempts to explain enzyme kinetics and action with the aid of a multitude of diagrams (which in many cases are rather scrappy) and no mathematics at all. I think a student is more likely to be confused rather than informed by this section. The third and largest section deals with metabolism. Here again, the use of a plethora of rather scrappy diagrams seems more likely to sow confusion than understanding. The treatment of much of intermediary metabolism is scimpy and there is no attempt to set it in a physiological framework. There is also a heavy use of terms such as ‘high-energy bond’ ‘energy release’ and ‘energy trapping’ which often are not appropriate. This book might be suitable for a student with little previous chemistry who is required for some reason to acquire a veneer of biochemistry, otherwise, it is not suitable as a serious biochemistry book.

Amino Acids, Peptides and Proteins: An Introduction (Macmillan: London; £15), by H-D. Jakubke and H. Jesehkeit is really a specialist book which might be of use as a reference text for final-year undergraduates taking an honours degree in biochemistry or chemistry. Visually, the book is rather unattractive, having plain diagrams and a small type-face. On the other hand, the amount of information it contains is considerable. The book falls into three parts. The first deals with the amino acids; their classification, physical properties, synthesis, analysis and reactions. The second part covers peptides—in particular, synthesis (problems encountered in the latter, general strategy, together with detailed methods). In fact one third of the entire book is given over to peptide synthesis. There is also an interesting section dealing with an extensive range of important naturally occurring peptides. The third part deals with proteins and covers classification, physicochemical properties, isolation and purification, sequence analysis and structure. The text is quite readable and does not seem to have suffered in the course of translation from the German version. The book is interspersed with frequent reference sections which by now are not very up-to-date (1972–74 are the latest references). In conclusion, a useful book, more to be used for reference than as a student’s reading book.

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